

APPENDIX C

GUIDELINE DOCUMENTS

Guideline for Determining Air Emissions Fees for Criteria Pollutants

If total facility actual emissions for any pollutant, excluding hazardous air pollutants, are less than 100 tons per year, then no fees are assessed for that pollutant. If total facility actual emissions for any single pollutant are greater than 4,000 tons per year, then fees are assessed on only the first 4,000 tons of emissions. Current fees are \$25 per ton of pollutant. Note that the 100 ton and 4,000 ton criteria are applied on a pollutant by pollutant basis, not on the sum total of PM₁₀, NO_x, SO₂, and VOC emissions.

Guideline for Determining Air Emissions Fees for Hazardous Air Pollutants

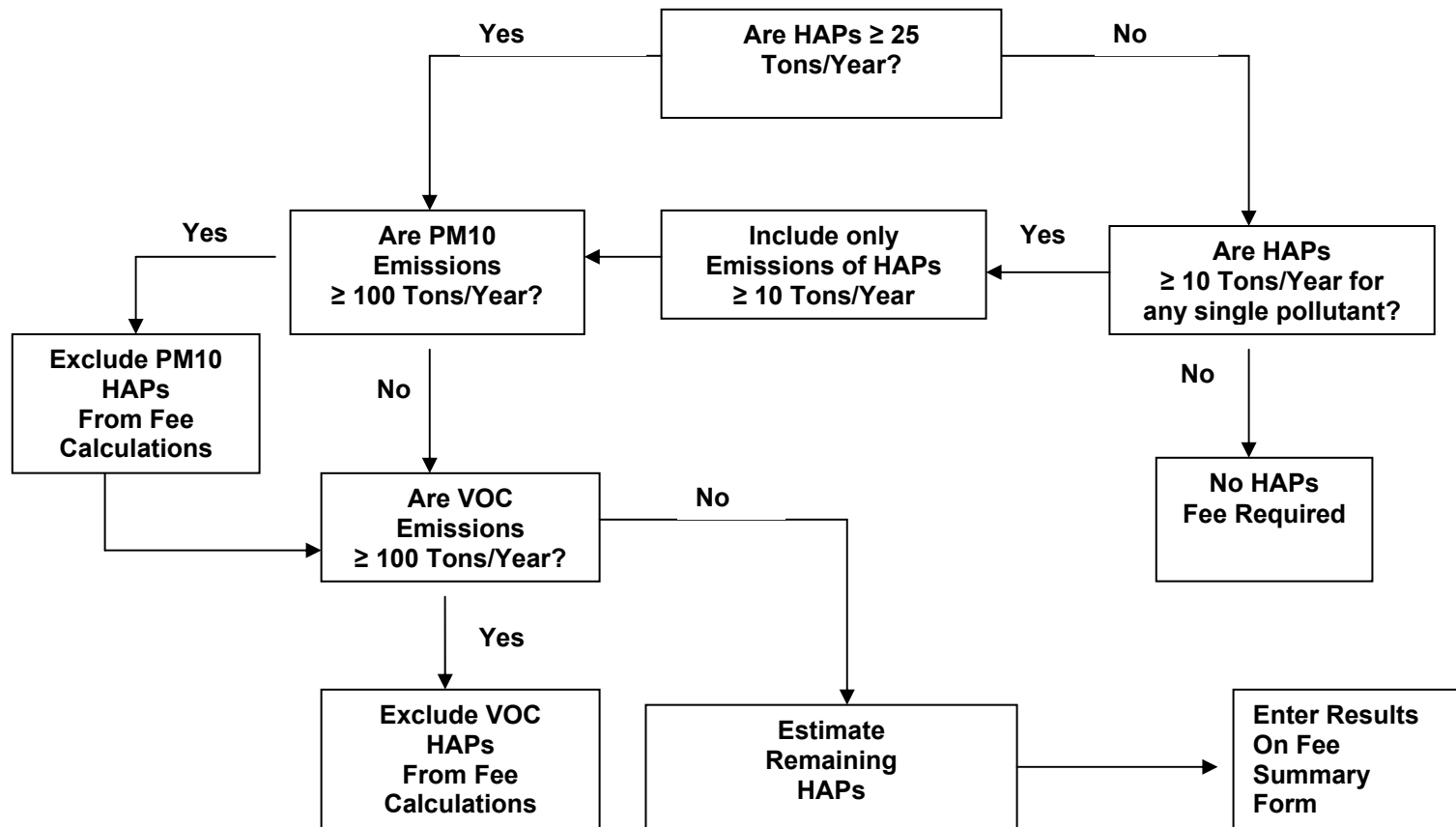
Pollutants which have been listed under the 1990 Clean Air Act and *K.A.R. 28-19-7* as Hazardous Air Pollutants (HAP) may also be subject to fees. If a facility has total HAP emissions greater than or equal to 25 tons per year or emissions of a single HAP greater than or equal to 10 tons per year, fees will apply to these HAP emissions. The attached HAP fee flowchart can be used along with the following instructions to determine which HAP's are subject to fees.

The first step in the process is to look at the facility total emissions of HAP's and see if those emissions are greater than or equal to 25 tons per year. If total HAP emissions are less than 25 tons per year, then the facility HAP emissions should be totaled for each pollutant. If HAP emissions for any single pollutant are greater than or equal to 10 tons per year, then emissions of only these individual HAP's will be subject to fees.

The next step in the process is to determine if these HAP emissions have already been assessed fees as a VOC or PM₁₀ emission. This could occur if the facility emits 100 tons per year or more of VOC or PM₁₀ and the HAP emissions were included in the estimation of the total VOC or PM₁₀. The portion of the HAP emissions that has been assessed a fee as PM₁₀ or VOC should be subtracted from the HAP emissions subject to fees. The HAP emissions should not be subtracted from VOC or PM₁₀ emissions prior to determining whether or not the facility is emitting 100 tons or more per year of VOC or PM₁₀.

If there are any remaining HAP emissions still subject to fees after the above exclusions, then this total is entered on the fee summary form as HAP emissions subject to fees. The intended concept in this process is not to assess a fee for the same emission more than once.

Guideline for Determining Air Emission Fees for Hazardous Air Pollutants (HAPs)



Guideline for Estimating Solvent Emissions Using Material Balance Procedures

For painting, printing, and solvents, the volatile organic compound (VOC) or hazardous air pollutant (HAP) emissions can be estimated using material balances. Total VOC or HAP emissions can be determined by summing the VOC or HAP contents of all compounds in the coatings and solvents used. This calculation is repeated for coatings or solvents returned to supplier for recycling. The VOC or HAP content of coatings and solvent reprocessed or disposed of are subtracted from the emissions if they are treated in a manner which prevents the release of the VOC or HAP into the atmosphere.

The total emissions of each HAP or total VOC shall be calculated by summing the results of the coating formulations as follows:

Added:

$$Q_{added} = \sum_{i=1}^n (Q_i)(C_i)(D_i)$$

where:

Q_{added} = Total quantity of regulated substance which enters the process or operation, lbs.

Q_i = Total annual coating consumption for each type of coating used, gallons/yr.

n = Number of different coatings used.

D_i = Density of each coating used, lbs/gal.

C_i = Measured average concentration (i.e., total VOC or HAP average concentration) in coating, percent by weight.

Consumed:

$$Q_{consumed} = \sum_{i=1}^n (Q_i)(C_i)(D_i)$$

where:

$Q_{consumed}$ = Total quantity of regulated substance which becomes an integral part of the product, lbs.

Q_i = Total annual coating consumption for each type of coating consumed, gallons/yr.

n = Number of different coatings used.

D_i = Density of each coating used, lbs/gal.

C_i = Measured average concentration (i.e., total VOC or HAP average

concentration) percent by weight.

Recovered:

$$Q_{recovered} = \sum_{i=1}^n (Q_i)(C_i)(D_i)$$

where:

- $Q_{recovered}$ = Total quantity of the regulated substance recovered for reuse which is not accounted for by the emissions control device, lbs.
 Q_i = Total annual coating consumption for each type of coating recovered, gallons/yr.
 n = Number of different coatings used.
 D_i = Density of each coating used, lbs/gal.
 C_i = Measured average concentration (i.e., total VOC or HAP average concentration) percent by weight.

The net uncontrolled emissions are then calculated with the following equation:

$$Q_{uncontrolled} = Q_{added} - Q_{consumed} - Q_{recovered}$$

where:

- $Q_{uncontrolled}$ = Net uncontrolled emissions, lbs.
 Q_{added} = Total quantity of regulated substance which enters the process or operation, lbs.
 $Q_{consumed}$ = Total quantity of regulated substance which becomes an integral part of the product, lbs.
 $Q_{recovered}$ = Total quantity of the regulated substance recovered for reuse which is not accounted for by the emissions control device, lbs.

To calculate the controlled emissions you will need the following:

Capture efficiency (CE) (in percent) for the collection system (hooding, ductwork, etc.) between the source of emissions and the emissions control device. For totally enclosed systems operating under negative pressure, the capture efficiency will be 100%.

Estimated control device efficiency (CDE) (in percent) for the device when controlling the pollutant.

The actual net controlled emissions would then be

$$Q_{\text{controlled}} = Q_{\text{uncontrolled}} * (1 - ((CE * CDE) / 10000))$$

where,

$Q_{\text{controlled}}$ = Net controlled emissions, lbs

$Q_{\text{uncontrolled}}$ = Net uncontrolled emissions, lbs.

CE = Capture efficiency, in percent, of the control device emissions collection system determined according to K.A.R. 28-19-210 (f)

CDE = Control device efficiency, in percent, determined according to 28-19-210 (f)

Worksheet 6 in the Emissions Inventory packet is used for calculation of overall control efficiency.